



Model Curriculum

QP Name: Assistant Technician – Weighing & Measuring Machine

QP Code: ELE/Q3126

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House, Okhla Industrial Area - Phase 3, New Delhi – 110020

Table of Contents

Training Parameters.....	3
Program Overview	4
Training Outcomes.....	4
Compulsory Modules.....	4
Module Details.....	5
Module 1: Introduction to the Machines and its Troubleshooting	5
Module 2: Calibration & related measurement services.....	6
Module 3: Employability Skills (60 Hours)	7
Module 4: On-The-Job-Training.....	8
Annexure.....	9
Trainer Requirements	9
Assessor Requirements.....	9
Assessment Strategy.....	10
References	11
Glossary.....	11
Acronyms and Abbreviations.....	12

Training Parameters

Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/8212.0400
Minimum Educational Qualification and Experience	10th grade pass OR 8th grade pass with 2 years of NTC (after 8 th) OR 8th grade pass with 2 years of relevant Experience OR 9 th grade pass with 1 year of relevant Experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	31.08.2023
Next Review Date	31.08.2026
NSQC Approval Date	31.08.2023
QP Version	1.0
Model Curriculum Creation Date	31.08.2023
Model Curriculum Valid Up to Date	31.08.2026
Model Curriculum Version	1.0
Maximum Duration of the Course	330 Hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Identify the malfunctioning in the electrical & electronic Components of the Weighing Machines
- Ability to identify problems and rectify the defects in the Weighing Machines
- Calibration of the machine as per the statutory requirements
- Skilling in the systematic troubleshooting
- Maintaining records
- Software programming of the machine
- Safety awareness

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
ELE/N3172 – Repairing of the Weighing and Measuring Machine	36:00	54:00	30:00	00:00	120:00
Module 1: Introduction to the machines and its troubleshooting	36:00	54:00	30:00	00:00	120:00
ELE/N3173 – Performance & Calibration of Weighing & Measuring Machine	30:00	90:00	30:00	00:00	150:00
Module 2: Calibration & related measurement services	30:00	90:00	30:00	00:00	150:00
DGT/VSQ/N0102 - Employability Skills (60 Hours)	24:00	36:00	00:00	00:00	60:00
Module 3: Employability Skills (60 Hours)	24:00	36:00	00:00	00:00	60:00
Total Duration	90:00	180:00	60:00	00:00	330:00

Module Details

Module 1: Introduction to the machines and its troubleshooting

Mapped to ELE/N3172

Terminal Outcomes:

- Describe the Overall theoretical understanding of Weighing & Measuring Machines

Duration: 36:00	Duration: 54:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> Knowledge of Mechanical, Electrical & Electronic Components Understanding of various classes of Weighing Machine Theoretical concept of Weighing Machine Machine testing and maintenance Understanding of the various Test like Eccentricity Test, weighing Test, Load Test etc. Basic understanding of related programming skills Document maintenance and preparation log 	<ul style="list-style-type: none"> Identification of the machine Knowledge of weigh bridge specifications and structure Identification and working of various electrical/ electronics/ mechanical parts and circuits Demonstrate the process of repairing/replacing component, if the fault identified is due to damage of parts like fuse etc. Repairing as per the standards Troubleshooting Skills
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Spanner Sets, Multimeter, Soldering Kit, Basic Tool Kit, Oscilloscope	

Module 2: Calibration & related measurement services

Mapped to ELE/N3173

Terminal Outcomes:

- Describe the Overall measurement services and Calibration Procedure

Duration: 30:00	Duration: 90:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Calibration Rules & Regulations as per the Guidelines of Legal Metrology Department • Understanding about Load Cells • Maintaining records • Software programming of the Machine 	<ul style="list-style-type: none"> • Calibration as per the standards • Verification & Stamping of the Weighing Machine • Understanding of Model Approval by RRSL (Regional Reference Standards Laboratory) • Understanding of the Renewal of the Certificate for Calibration • Safety Awareness
Classroom Aids:	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Spanner Sets, Multimeter, Soldering Kit, Basic Tool Kit, Oscilloscope	

Module 3: Employability Skills (60 Hours)

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about Employability Skills in meeting the job requirements
- Describe opportunities as an entrepreneur.
- Describe ways of preparing for apprenticeship & Jobs appropriately.

Duration: 24:00	Duration: 36:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain constitutional values, civic rights, responsibility towards society to become a responsible citizen • Discuss 21st century skills • Explain use of basic English phrases and sentences. • Demonstrate how to communicate in a well-behaved manner • Demonstrate how to work with others • Demonstrate how to operate digital devices • Discuss the significance of Internet and Computer/ Laptops • Discuss the need for identifying business opportunities • Discuss about types of customers. • Discuss on creation of biodata • Discuss about apprenticeship and opportunities related to it. 	<ul style="list-style-type: none"> • List different learning and employability related GOI and private portals and their usage • Show how to practice different environmentally sustainable practices. • Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, etc. • Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Demonstrate how to communicate in a well -mannered way with others. • Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette • Utilize virtual collaboration tools to work effectively • Demonstrate how to maintain hygiene and dressing appropriately. • Perform a mock interview
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Computer, UPS, Scanner, Computer Tables, LCD Projector, Computer Chairs, White Board OR Computer Lab	

Module 4: On-the-Job Training

Mapped to Assistant Technician – Weighing & Measuring Machine

Mandatory Duration: 60:00	Recommended Duration: 00:00
Location: On Site	
Terminal Outcomes <ol style="list-style-type: none">1. Explain the fundamental concept of a Weighing & Measuring Machine2. Illustrate the preliminary tasks involve in the testing and maintenance of a Machine3. Demonstrate how to perform preliminary checks on a Machine4. Demonstrate how to carry out troubleshooting for different issues in a Machine5. Test functioning of the Machine post servicing6. Interact and coordinate with supervisor and colleagues7. Perform assigned work within timelines and with defined quality8. Demonstrate how to maintain a healthy, safe and secure working environment	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
BE/B.Tech	Electrical/ Electronics/ Mechanical	1	Relevant Industry	1	Training	
Diploma/ITI	Electrical/ Electronics/ Mechanical	2	Relevant Industry	1	Training	
Certified in relevant CITS Trade						

Trainer Certification	
Domain Certification	Platform Certification
“Assistant Technician – weighing & Measuring Machine, ELE/Q3126, version 1.0”. Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Assistant Technician – Weighing & Measuring Machine “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, V2.0”, with minimum score of 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
BE/B.Tech	Electrical/ Electronics/ Mechanical	2	Relevant Industry	2	Training (preferably)	
Diploma/ITI	Electrical/ Electronics/ Mechanical	3	Relevant Industry	2	Training (preferably)	
Certified in relevant CITS Trade						

Assessor Certification	
Domain Certification	Platform Certification
“Assistant Technician – Weighing & Measuring Machine, ELE/Q3126, version 1.0”. Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Assistant Technician – Weighing & Measuring Machine “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, V2.0”, with minimum score of 80%

Assessment Strategy

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
 - Surprise visit to the assessment location
 - Random audit of the batch
 - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
 - Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
 - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

References

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'

Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack

TVET	Technical and Vocational Education and Training
IPR	Intellectual Property Rights